

Factor

$$y = 3x^2 + 7x + 4$$

$$y = 2x^2 - 5x + 3$$

$$y = 5x^2 - 14x - 3$$

Apr 14-11:41 AM

(4.5) Factoring Special Patterns

Difference of Squares

Review:

Simplify: $(3x + 2)(3x - 2)$

$$\begin{array}{r} 9x^2 - 6x + 6x - 4 \\ \hline 9x^2 - 4 \end{array}$$

A difference of squares is a binomial where both terms are perfect squares and they are separated by a subtraction sign.

Factor by taking the square root of the first term and the square root of the second term and putting them into brackets with a + and a - sign.

Factor the following:

a) $9x^2 - 25$

$$\begin{array}{r} 3x \quad 5 \\ (3x + 5)(3x - 5) \end{array}$$

b) $16 - 64t^2$

$$\begin{array}{r} 16(1 - 4t^2) \\ 16(1 - 2t)(1 + 2t) \end{array}$$

c) $4p^2 - 121$

$$\begin{array}{r} 2p \quad 11 \\ (2p + 11)(2p - 11) \end{array}$$

d) $4x^2 + 16$

non factorable

Apr 17-10:40 PM

Perfect Square Trinomials

Review:

Simplify: $(3x - 5)^2$

$$\begin{array}{r} (3x - 5)(3x - 5) \\ 9x^2 - 15x - 15x + 25 \\ \hline 9x^2 - 30x + 25 \end{array}$$

A perfect square trinomial consists of a perfect square as the first and last terms, and the middle term is a result of two times the square root of the first term and the square root of the last term.

Step 1: Confirm the trinomial is a PST by checking the middle term.

Step 2: Factor using the "short-cut".

Factor the following:

a) $4a^2 - 12a + 9$

$$\begin{array}{r} 2a \quad 3 \\ (2a - 3)^2 \end{array}$$

b) $16a^2 - 40ab + 25b^2$

$$\begin{array}{r} 4a \quad 5b \\ (4a - 5b)^2 \end{array}$$

c) $9x^2 + 60x + 100$

$$\begin{array}{r} 3x \quad 10 \\ (3x + 10)^2 \end{array}$$

d) $4x^2 - 28x + 49$

Apr 17-10:32 PM

Checklist for Decomposition

1. Common Factor
2. Check for Perfect Squares / Difference of Squares
3. Add/ Multiply Chart
4. Separate middle term into it's two factors
5. Partial factor terms
6. Set Binomials (Common Binomial) (Factored Binomial)

Apr 14-7:55 AM

Homework

p. 230-231 q. 3 odds, 4 -7, 9-11, 12*, 13

Test Thursday

Apr 14-7:58 AM